REMARKS

Status of the claims

By this response, claims 1, 2, 4-7, 13-15 and 21 are amended. No new matter has been added. Accordingly, claims 1-21 are pending.

Double Patenting

Claims 1-21 are rejected for alleged obviousness-type double patenting over claims 1-11, 20-21, 24-32, and 36-44 of U.S. Patent No. 5,650,554, as well as over claims 1-11, 13, 17-23 and 28-40 of co-pending Application No. 09/893,525. Applicants' submission of a Terminal Disclaimer and an executed Assignment obviates the basis for this rejection, withdrawal of which is requested.

Rejections --35 U.S.C, § 112, first paragraph

Claims 1-21 are rejected for alleged lack of written description. In the Offfice Action of January 14, 2003, examiner Fox indicates that "insertion of --NADPH-- before thioredoxin reductase would obviate this rejection." *See* page 6. Since the present version of the claims conforms to the examiner's suggestion, applicants respectfully request withdrawal of the rejection.

Rejections--35 U.S.C. §112, second paragraph

Claims 2-9 and 13-21 are rejected under 35 U.S.C.§112, second paragraph, for alleged indefiniteness. Following the guidance of Examiner Fox, as indicated on pages 6-7 of the Office Action, applicants believe the present version of the claims avoids these issues. Accordingly, applicants request reconsideration and withdrawal of the rejections.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date 14 July 2003 By S. A. Bent

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

1. A method for the expression of a thioredoxin or NADPH thioredoxin reductase by a host cell said method comprising:

a) introducing into a plant~~, bacterial or yeast host~~ cell a chimeric nucleic acid sequence comprising:

1) a first nucleic acid sequence capable of regulating the transcription in said host cell of

2) a second nucleic acid sequence, wherein said second sequence encodes a fusion polypeptide and comprises (i) a nucleic acid sequence encoding a sufficient portion of an oleosin gene to provide targeting of the fusion polypeptide to a lipid phase linked in reading frame to (ii) a nucleic acid sequence encoding a thioredoxin or NADPH thioredoxin reductase; and

3) a third nucleic acid sequence encoding a termination region functional in the host cell; and

b) growing said host cell to produce the fusion polypeptide.

2. The method according to claim 1 further including separating the ~~recombinant~~ fusion polypeptide from cellular host cell components by selective partitioning into a lipid phase.

4. The method according to claim 1 further including separating the ~~recombinant~~ fusion polypeptide from cellular host components by selective partitioning into a lipid phase comprising oil bodies.

5. The method according to claim 4 wherein said ~~recombinant~~ fusion polypeptide is separated by addition of oil body components and reconstitution of the oil bodies.

6. The method according to claim 2 further comprising releasing the ~~heterologous~~ thioredoxin or NADPH thioredoxin reductase polypeptide from the fusion polypeptide associated with the lipid phase, said method comprising:

c) including in said second ~~DNA~~ nucleic acid sequence (2) between said DNA sequence (i) encoding the ~~oil body~~ oleosin protein and the ~~DNA~~ nucleic acid sequence (ii) encoding the thioredoxin or NADPH thioredoxin reductase, a linker ~~DNA~~ nucleic acid sequence (iii) encoding an amino acid sequence that is specifically cleavable by enzymatic or chemical means; and

d) contacting the lipid phase with said enzymatic or chemical means such that said thioredoxin or NADPH thioredoxin reductase is released from the fusion polypeptide.

7. The method according to claim 6 wherein said linker ~~DNA~~ nucleic acid sequence encodes an amino acid sequence that is recognizable by the proteolytic action of an enzyme selected from the group consisting of thrombin, factor Xa, collagenase, chymosin, clostrapain and viral protease.

13. A chimeric nucleic acid sequence, capable of being expressed in association with an oil body of a plant host cell, comprising:

1) a first nucleic acid sequence capable of regulating the transcription in said host cell of

2) a second ~~DNA~~ nucleic acid sequence, wherein said second sequence encodes a fusion polypeptide and comprises (i) a nucleic acid sequence encoding a sufficient portion of an oleosin gene to provide targeting of the fusion polypeptide to a lipid phase linked in reading frame to (ii) a nucleic acid sequence encoding a thioredoxin or NADPH thioredoxin reductase; and

3) a third nucleic acid sequence encoding a termination region functional in the host cell.

14. The chimeric nucleic acid sequence according to claim 13 further including (iii) a linker nucleic acid sequence encoding an amino acid sequence that is specifically cleavable by enzymatic means wherein said linker nucleic acid sequence (iii) is located between said (i) nucleic acid sequence encoding the ~~oil body~~ oleosin protein and said (ii) nucleic acid sequence encoding the thioredoxin or NADPH thioredoxin reductase.

15. The chimeric nucleic acid according to claim 14 wherein said nucleic acid linker sequence (iii) encodes a cleavage site for an enzyme selected from the group consisting of thrombin, factor Xa, collagenase, chymosin and viral protease.

21. A plant seed according to claim 20 wherein said plant seed is a *Carthamus tinctorius* (safflower) plant seed.